pressing the outer periphery of the metal sheet material in a radially inward direction, while continuing to rotate the metal sheet material;

thickening the outer periphery axially and without buckling by said pressing;

protruding the outer periphery to either side of the non-processed portion of the metal sheet material; and

forming a peripheral wall protruding to either side of the non-processed portion.

REMARKS

The examiner's reopening of prosecution by the issuance of the Office Action of October 24, 2001 is noted.

Claims 1-6 and 8 are rejected as anticipated by Kanemitsu et al '787, and claims 1-6 and 8 are rejected as unpatentable under 35 USC 103(a) over Deggau et al in view of Pacak.

In reply thereto, claim 1, the sole independent claim has been amended again to further clarify the inventive method over the art noted above.

As further amended, claim 1 notes that the non-processed portion of the disc-shaped metal sheet includes a stepped portion defined by an inclined wall. This is part of the formation step of the disc-shaped metal sheet which allows the remaining steps of the recited method to be carried-out in a stable manner.

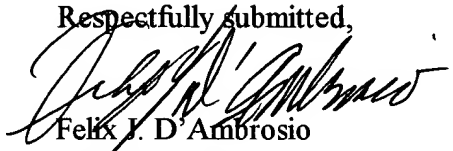
There is no similar type of formation step disclosed by Kanemitsu et al '787. In column 5, lines 46-54 of Kanemitsu et al '787, it is disclosed that the bending which produces the "flanged cup shape" takes place after the "thickened portion 12" is formed not before.

Accordingly, the "flanged cup shape" cannot lend stability to the formation of the thickening portion 12. The stepped portion with an inclined wall allows the annular member to withstand radial pressing forces applied to the outer periphery 15 as it is being formed into various shapes and ultimately into the peripheral wall 21. A radial force applied to a flat sheet must be perfectly centered to achieve optimum resistance. With a stepped portion the radial force need not be perfectly centered. A range of off-centered loading is possible while still achieving optimum results. This is the advantage achieved with a stepped portion and especially one with an inclined wall. The stepped portion need not be retained after formation of the peripheral wall 21, but it must be present during its formation. Since Kanemitsu et al '787 does not teach a stepped portion with an inclined wall, it cannot, it is respectfully submitted, anticipate claims 1-6 and 8.

Deggau et al and Pacak also do not teach the formation step now defined in claim 1. Deggau et al has no inclined wall at all. Neither does Pacak Pacak has a cap portion but not an inclined wall which would provide the stability needed for any further steps as noted above. It is a fundamental understanding in structural mechanics that a straight wall, like that disclosed in Pacak, cannot provide the same resistance to radial forces that an inclined wall does, so that the stability desired cannot be provided. The skilled person in the art desiring stability so that perfectly centered radial forces are not needed would not, it is respectfully submitted, learn anything from Pacak that would help in this objective. That person would know that a straight wall would not provide the degree of force resistance needed, and since Pacak discloses nothing else, that person would have to use precise and perfectly centered radial forces, which is not the purpose of this invention.

In view of the foregoing, reconsideration and re-examination are respectfully requested and claims 1-6 and 8 found allowable.

Respectfully submitted,



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MARKED-UP COPY OF AMENDED CLAIM 1

1. (Thrice Amended) A method of manufacturing an annular member from a disc-shaped metal sheet material defining an outer periphery, comprising the steps of:

forming the disc-shaped metal sheet to have a non-processed portion including a stepped portion defined by an inclined wall;

rotating the disc-shaped metal sheet material;

pressing the outer periphery of the metal sheet material in a radially inward direction, while continuing to rotate the metal sheet material;

thickening the outer periphery axially and without buckling by said pressing;

protruding the outer periphery to either side of the non-processed portion of the metal sheet material; and

forming a peripheral wall protruding to either side of the non-processed portion.